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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Welsh & Katz
22nd Floor
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Chicago, IL 60606-3913

EXAMINER

NGUYEN, MINH T

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/889,260

Applicant(s)

HART ET AL.

Examiner

Minh Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7. 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to because the block circuits 1-9 shown in Fig. 1 and the block circuits 1-2 and 4 shown in Fig. 5 do not have text labels. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because:

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(i) the abstract should not repeat the information given in the title, i.e., “The electronic phase-locked loop (PLL)” on line 1,

(ii) the abstract should not refer to purported merits or speculative applications of the invention, i.e., “is used ...” on line 5.

Correction is required. See MPEP § 608.01(b).

5. The disclosure is objected to because of the following informalities: Section headers such as “BACKGROUND OF THE INVENTION”, “SUMMARY OF THE INVENTION”, ... are missing in the specification.

Appropriate correction is required.

Claim Objections

6. Claims 1-2 are objected to because of the following informalities:

In claim 1, lines 4 and 6, the terms “the oscillator” should be changed to -- the controllable oscillator -- to be consistent with the term used on line 3. The term “ is connected up to” recited on line 7 should be changed to -- is connected to --.

In claim 2, line 3, the terms “the oscillator” should be changed to -- the controllable oscillator -- to be consistent with the term used on line 3 of claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1, the phrase "in particular" recited on line 2 renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention, i.e., it is unclear if the data communication or networks is part of the claimed invention. See MPEP § 2173.05(d). It is unclear if the term "it" recited on line 4 refers to the PLL or the oscillator. The term "the digital phase-locked loop" recited on line 7 lacks clear antecedent basis, i.e., it is unclear if this is referring to the "electronic phase locked loop" recited on line 1. The phrase "the digital phase-locked loop is connected up to an additional analog phase detector and a lock detection for activation" is unclear, i.e., it is unclear which element(s) activate(s) which element(s).

As per claims 2-3, these claims are indefinite because of the indefiniteness of claim 1.

As per claim 4, the same problem exists as discussed in claim 1.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b)

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only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,028,460, issued to McCollum et al.

As per claim 1, McCollum discloses an electronic phase locked loop circuit for jitter attenuated clock multiplication (Fig. 3), in particular as part of an integrated circuit for integrated communication networks or networks (column 1, lines 5-10) in which a frequency of a controllable oscillator (the frequency of the output signal of the oscillator 240) is set in such a way that it corresponds to a reference frequency (the frequency of the reference crystal oscillator 100), an output signal of the oscillator 240 being compared with the reference frequency (the reference frequency of the reference signal generated by the generator 100) in a digital phase detector (the phase detector 320), and an output signal of the digital phase detector (the output signal from the detector 320) setting the frequency of the oscillator via a digital regulated system (the amplifier 330, loop filter 230 determines the frequency of the signal generated by the oscillator), wherein the digital phase lock loop (Fig. 3) is connected up to an additional analog phase detector (the phase detector 220) and a lock detection 400 for activation.

As per claim 3, McCollum further discloses a configuration such that (Fig. 3 discloses such a configuration), in the event of transition of the digital phase locked loop into a limit cycle with a phase error (Fig. 5), called jitter, alternating between accuracy is cancelled by the additional analog phase detector 220, the lock detection 400 activating the analog phase detector via a line (the line carries the signal to control the switch 500), said analog phase detector

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thereupon regulating both clock edges of the jitter in a continuously variable manner until said clock edges are synchronous with one another (see columns 4-5 for the operation).

As per claim 4, since McCollum discloses the electronic phase locked loop circuit is implemented in communication devices (column 1, lines 5-10) and the communication devices are integrated circuits, the recited limitation is met.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,028,460, issued to McCollum et al.

McCollum discloses an electronic phase locked loop circuit having elements and connections as discussed in claim 1 herein above, he further discloses the digital phase lock loop (Fig. 3) comprises a digital phase detector 320, a code converter 400, a PI filter 430, a drive circuit 330 for the oscillator 240, the oscillator 240 which is designed as a digitally controllable crystal oscillator (the McCollum's oscillator 240 is driven by the digital PLL, i.e., digitally controllable), and a divider 340, the lock detection 400 being undertaken by the code converter (column 4, lines 15-62).

McCollum does not explicitly disclose the divider 340 is implemented being a counter as called for in the claim.

The examiner takes Official Notice the fact that implementing a counter by flip-flops for used as a divider is old and well-known in the art, even text books teach this fact.

It would have been obvious to one skilled in the art at the time of the invention was made to implement the McCollum's divider 340 using flip-flops functioned as a counter.

The motivation/suggestion for doing so would have been obvious since by implementing the McCollum's divider 340 using flip-flops as counter, the artisan can save time since the teaching for implementing the divider as a counter using flip-flops is available almost everywhere.

Therefore, it would have been obvious to implement the McCollum's divider as counter to obtain the invention specified in the claim.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. 4,686, 560 to Balaban et al discloses a PLL circuit (Fig. 3) which includes digital and analog components.

US Patent No. 5,057, 793 to Cowley et al discloses a PLL circuit (Fig. 6) which includes digital and analog components.

US Patent No. 4,490, 688 to Borrás et al discloses a PLL circuit (Fig. 2) which includes digital and analog components.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Nguyen whose telephone number is 703-306-9179. The examiner can normally be reached on Monday - Thursday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 703-308-4876. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Minh Nguyen
Examiner
Art Unit 2816

MN
December 9, 2002